

Official Monthly Publication
of the
**MONTANA AERONAUTICS
COMMISSION**

Box 1698

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* * *

R. J. (Dick) Munroe, Editor

Airport Aid Bill

A compromise airport bill was pushed through the House by a 396 to 4 vote September 13, after House-Senate conferees reported that they had failed to resolve differences in the original legislation. The compromise bill provides direct-appropriations financing for federal aid to airports at the rate of \$75,000,000 per year for three years, with the intent that the appropriation for the first two years will be made this year, in order to provide the necessary lead time for projects. The third year appropriation will be made in 1962. As reported before, the original bill provides for a five-year, \$75,000,000-a-year program.

This big argument is not on the matter of federal-aid to airports but on the issue of "back-door" spending, which seems destined to become one of the most controversial of all Congressional issues. Members of the House appropriations committee are on the warpath, decidedly hostile to all federal expenditures which are authorized by treasury borrowing or by contract authorization which thus results in commitments in advance of appropriation.

September 25, 1943—Col. Roscoe Turner establishes a new West-East transcontinental record of 10 hours, 4 minutes, 55 seconds, in flight from Burbanks, California to Floyd Bennett Field.

Instrument Flight Examination Guide Available from M.A.C.

A guide for pilots taking the flight test for an instrument rating has been published by the Federal Aviation Agency.

The eight-page, pocket-sized booklet describes oral, instrument flying and radio navigation and approach procedures included in the test, and is available from the Montana Aeronautics Commission, Box 1698, Helena, for 15c.

The guide, which follows the pattern of several such aids prepared by the FAA for airmen taking written and flight examinations, goes into detail on the skills and knowledge the FAA expects the applicant to demonstrate. This test involves an oral phase which covers operational aspects including the filing of an instrument flight plan, pre-planning of instrument flights, aircraft performance and the proper use of instruments and equipment.

Other aviation publications available from the Montana Aeronautics Commission are listed below.

Aircraft Dispatcher Exam Guide	 \$.20
Aircraft Power Plant Handbook	 1.50
Airplane Flight Instructor Examination Guide	15
All Weather Flight Manual	 3.50
Civil Air Regulations Exam Guide	 N.C.
Commercial Pilot Examination Guide	75
Commercial Pilot Flight Test Guide	15
Experiment in Contact Instrument Flight Training	 N.C.
Export & Import of Aeronautical Products	55
Facts of Flight	50
Flight Information Manual	60
Flight Instructor's Handbook	 1.50
Flight Operation Release No. 420 (Part 20)	05
General Aviation Aircraft Radio Equipment	20
General Aviation in Alaska	10
Helicopter Design Guide	30
Instrument Flight Instructor Written Exam Guide	15
Instrument Pilot Examination Guide	65
List of Aviation Medical Examiners	 N.C.
Multieengine Class or Type Rating: Flight Test Guide	10
Path of Flight	65
Personal Aircraft Inspection Manual	55
Pilot Instruction Manual	 1.50
Pilots Radio Handbook	60
Pilots Weather Handbook	 1.50
Private Pilots Examination Guide	75
Private Pilot Flight Test Guide—Single Engine Airplane	10
Project Hummingbird—the Helicopter and other V/Stol Aircraft in Commercial Transportation Service	 N.C.
Questions and Answers for Private Pilots	25
Radio and Instrument Flying	 5.00
Realm of Flight	75
Terrain Flying	40
180 Degree Turn Experiment	 N.C.
Community Planning for Air Transportation	 N.C.

A young flier, filling out an accident report, made the following statement:

"I landed very smoothly, but I overshot the runway, went through the fence, hit a stump, and then I lost control."

Montana Pilots Association President's Report

Here's a first hand report on the "Ox Bow" incident. As most of you know, our fall fly-in was transplanted from the Ox Bow Ranch strip to the Diamond S Ranchotel, in Boulder. And very successfully, too, I might add. This is the first fall fly in to my knowledge where the committee changed location, and promoted the rebuilding of an airstrip all in the last week before the event but chairman C. D. Markle successfully negotiated this and I might add probably couldn't have successfully accomplished it without the fine cooperation and help of the Montana Aeronautics Commission staff.

At any rate the Boulder strip looked like L. A. International to me when I came in for a landing and a good time was had by all attending.

Your directors passed a resolution expressing the deep appreciation of the MPA to the Montana Radio Broadcasters and the Montana Press for their fine coverage of the Alaska Air Tour this spring which was sponsored by the Montana Chamber of Commerce and the Montana Aeronautics Commission and which has done a lot to promote interest in private flying in the State and which certainly demonstrated the versatility and dependability of the private aircraft.

The Dillon hangar is to be congratulated on the Airport Dedication, fly-in breakfast, and air show which they sponsored September 3. That is a real live-wire, air minded group and judging from the crowd that assembled at the airport they did a good job of selling the package locally and throughout the State.

Yours for better flying,
Mark Etchart
M.P.A. President

Trans-World Airlines has been granted a 200-hr. extension of its time between overhauls to 2,200 hours on the Pratt & Whitney JT 3C-6 turbojet engine—approximately a million miles!

Notice

East Poplar Unicom is now in operation.

MONTANA AERONAUTICS COMMISSION

NEWS LETTER

September, 1961



Volume 12—No. 9

September, 1961

Civil Aircraft Grounded

For a twelve-hour period on Saturday, October 14, the airspace above the United States, Canada and certain ocean areas will become the exclusive province of the North American Defense Command.

From 10:00 a.m. until 10:00 p.m. all other flying must give way to Operation SKY SHIELD II, an exercise in the defense of the continent north of Mexico.

About 2,000 U.S. and Canadian aircraft and a small contingent of British bombers will take part in the tactical maneuvers. Attempts to jam communications and air traffic control facilities by "aggressors" will add realism to the action.

The entire domestic and international air carrier fleet of 1,880 planes, the 125,000 passengers who would ordinarily be traveling and general aviation's 70,000 aircraft will be grounded during this period in the interest of safety. Foreign airlines' U. S. operations will also be suspended.

Federal Aviation Agency Administrator N. E. Halaby said that FAA deeply appreciated the cooperative attitude of the airlines, corporate and business aircraft operators, private pilots and the traveling public during last year's exercise and feels certain that their support for SKY SHIELD II will be equally impressive.

The Great Falls Tribune Publishes State Weather Map

The Great Falls Tribune now publishes a daily weather map of Montana. This is a very valuable service to Montana pilots and you may keep yourself currently informed on the weather picture in our State by turning to the daily weather map in this paper.

If you like this service, write to the Tribune and tell them how much you appreciate it and express your interest in their continuing the publication of a daily weather map.

Coming Aviation Events

Sept. 30—Flying Farmers and Ranchers annual meeting, Florence Hotel, Missoula.

Sept. 30—99's, Inc., Northwest Annual Sectional Convention, Montana Chapter hostesses, Florence Hotel, Missoula.

Oct. 7-14—Annual All Texas Air Tour—Contact Texas Air Tours, 307 Walton Bldg., Austin, Tex.

Oct. 8-9-10—Silver Anniversary, International Northwest Aviation Council, Spokane, Washington.

Oct. 9-15—AOPA 1961 Plantation Party at the Tides, LaPlaya and Admiral Hotels, St. Petersburg, Florida. Contact A. H. Frisch, Adv. Dir., AOPA, Washington 14, D.C.

Good Sense!

The pilot of the Eastern Air Lines Electra that was hijacked and forced to land in Havana last July was directed by the gun wielding hijacker to turn to a heading of 210°. The pilot could have done this by making a small turn to port. Instead he made a wide sweep to starboard to reach the 210° heading to alert ground radar that something was wrong.

FAA Air-Share Meeting

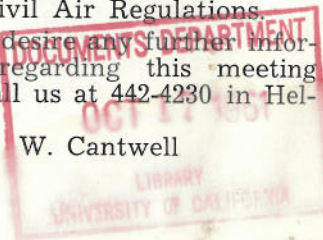
Helena, Oct. 21, 1961; 9:00 a.m.

In keeping with the policy of FAA Administrator Halaby to give the aviation industry in our area an opportunity to discuss aviation in general and Part 43 of the Civil Air Regulations in particular, the General Aviation District Office of Helena cordially invites you to an Air Share meeting in Helena at 9:00 a.m. October 21, 1961 to be held at the Aeronautics School located on the west end of the Helena Airport.

This is your opportunity, you of the industry, to step forward and make heard your suggestions as to the formulation of Part 43 of the Civil Air Regulations.

If you desire any further information regarding this meeting please call us at 442-4230 in Helena.

W. Cantwell



Air Traffic Shows Increase in 1960

Significant increases in passengers, cargo and mail carried last year by U.S. Airlines, coupled with a drop in the number of flights, are reported in a publication released by Federal Aviation Agency.

The decline in the volume of flights is attributed to increasing use of the more efficient jet transports, with their greater speed and load capacity.

The number of passengers boarding domestic trunk and local service flights in the 48 contiguous states rose to 50,584,135 in 1960 from 49,357,870 in 1959. Mail tons rose from 164,216.2 in 1959 to 183,663.1 in 1960, and cargo tons rose to 510,492.5 over the previous year's 501,713.6. Aircraft departures dropped from 3,420,682 in 1959 to 3,343,989 in 1960.

WANTED TO TRADE: New or used John Deere machinery for used airplane. White Sheridan Impl. Co., Plentywood, Mont.

FOR SALE: 1949 Aeronca Sedan 15AC metal wings and fiberglass fuselage, 1,374 total hours with zero time on majored C-145-2 engine. Has T & B S.A.—R of C—Stall warner—LF, VHF radio. New headliner and carpet, front seats reupholstered. \$3,000. Would trade down. E. H. Mielke, Box 564, Harlowton, Montana.

Large airport facilities for lease to qualified fixed base operator. Interested parties contact Box 412, Cut Bank, Montana.

TRADE: John Deere Model 430 Crawler with Dozer; less than 500 hrs. since new for reasonable 4-place plane—Stinson, 170—or what have you. Write John F. Melin, Ten Sleep, Wyo. Dozer is in Montana.

1956 G Model Beech Bonanza. Good buy. 672 hrs—13,000. VHF, LF, ADF, Auto pilot. Geo. Orcutt, Conrad, Montana.

Hangar available, will rent or sell. Contact Clay Greening, Laurel, Montana, phone 698-4618.

FOR SALE: 1958 Piper Comanche 180, Super Custom, full panel with ADF 12E, Mark 2 Omni. 30 hours since major overhaul and all bulletins complied with and Annual. 760 hours total. Contact Mark Hatch at Hatch Motor Co., 415 East Main, Cut Bank, Montana, phone WEst 8-2861.

FOR SALE: 1948 Beechcraft Bonanza A-35; 3 months since annual. Full panel with VHF transmitter & receiver, LF receiver, ADF. Will sell outright or trade for a plane in the \$2,500 price range. Sale price \$6,700. Contact Ken Hansen, Poplar, Montana. Phone 768-3401 or 768-3816.

Congratulations!



Certificates Issued Recently To Montana Fliers

J. V. Shennum, Scobey, Commercial Sea Rating

S. D. Gates, Lewistown, Private

R. D. Halverson, Glasgow AFB, Private

J. M. Sands, Glasgow AFB, Private

R. A. Williamson, Glasgow AFB, Private

L. L. Larson, Fishtail, Private

P. J. Olson, Billings, Private

William J. O'Donnell, Philadelphia, Pa., Com. ASMEI, DC-3 & Instrument

Harry A. Miller, Billings, Private ASEL

Johnny R. Richem, Choteau, Student

David L. Doig, Townsend, Student

Stephen M. Johnson, Great Falls, Student

Jerry W. McDowell, Great Falls AFB, Com. ASEL & Instrument

Mark K. Davis, Great Falls AFB, Com. ASEL & Instrument

Lyle T. Soule, Great Falls, Student

Wallace C. Love, Butte, Student

Ferdinand E. Hardebeck, Butte, Student

Howard D. Hamilton, Whitefish, Student

Richard S. Poitras, Great Falls, Student

Marshall T. Messelt, Great Falls, Private ASEL

Edward K. Fish, Great Falls AFB, Student

Enos T. Oyler, Manhattan, Student

Stanley G. Johnson, Black Eagle, Student

John A. Palmquist, Jr., Helena, Student

Floyd A. Williamson, Superior, Student

Gerald D. Wilson, Lewiston, Idaho, Rotorcraft added to Com.

ASMEI, Ford 5, Grumman TBM, B-26 & Instrument

Nelson S. Weller, Helena, Student

Jack R. Harper, Helena, Student

Ronald E. Normandeau, Polson, Student

Wilbur L. Burgess, Springfield, Mo., Student

Edward G. Bouchard, Great Falls, Student

Edgar R. Palmer, Missoula, Private ASEL

Robert F. Cummings, Butte, Student

Neal A. Ambrose, Butte, Student

Berton E. Williams, Butte, Private

Carl W. Daniel, Butte, Private

Private Pilots May Carry Passengers To Aid in Raising Funds

Private pilots may carry passengers in the course of fund-raising drives by charitable organizations, but may not receive compensation for the flights, the Federal Aviation Agency ruled August 9, in amending Part 43 of the Civil Air Regulations.

Upon appeal from the 1961 March of Dimes Committee the FAA reviewed the subject of "charity fund flights" and decided that, with appropriate limitations, such flights could be safely made by private pilots. Exemptions from the regulations requiring commercial pilots when passengers are carried for hire have, in some cases in the past, been issued to authorize private pilots to engage in charity airlifts. Amendment of Part 43 simplified the procedure, as exemptions will no longer be needed.

The new regulation provides that the sponsor for the flight must notify the local FAA inspector seven days before the event; all flights must be from public airports or airports approved by an FAA inspector; the private pilot concerned must have logged 200 flight hours; no acrobatic or formation flying shall be done; the aircraft used must meet the airworthiness requirements for carrying passengers for hire; and all flights shall be under visual flight rules and during daylight hours.

A charitable organization, the FAA rules, is one that appears on the list of the U.S. Treasury Department's 1960 Publication No. 78, available from the Superintendent of Documents, Washington 25, D.C., for \$2.00 a copy.

(F.A.A. News)

Director's Column

Air Space

SEE YOUR AIRMAN'S GUIDE published every two weeks by the F.A.A.

I would like to invite your attention to the diagram in this Newsletter of areas in which pilots are cautioned to watch for low level operations of military aircraft engaged in tactical training. Two of these routes are located in Montana and a third route is tentatively proposed, which will be a 10-mile wide corridor from a point at approximately Fairview, Montana, west to Van Norman and then southwest to a point near Sumatra. The diagram of this route will be published at a later date.

Military tactical aircraft will be flying at speeds in excess of 300 knots which makes one wonder if they would see a light aircraft on a collision course with them, with the added thought that the severe turbulence created by their wing-tip vortex would cause no end of confusion and be very disconcerting to the pilot of the light aircraft who suddenly witnessed the departure of his wings from the fuselage.

I recently attended two conferences on the subject of air space and air traffic control which I believe the thinking pilot will recognize as a very decided "must" that he be capable of specifically pinpointing his location at any time—the prerequisite for which includes precise navigation and familiarity with radio and radar control, and a basic understanding and training in instrument flying.

The proposed control of air space around airports of high density traffic is now becoming very specific and mandatory. There are three areas of air space with which a pilot should be familiar. The space immediately above the airport known as the control zone will include an area of air space with a radius of a minimum of five miles and may be extended up to 25 miles. The area may or may not be a circle; it may include segments of a circle with a specified radius with indentations or projected areas pertaining to departure and approach needs. This area is known as a CONTROL ZONE and will

extend upward from the ground level of the airport for a distance of 700 feet. The radius of the circle describing the area is made from a designated point at the center of the airport.

Immediately above the CONTROL ZONE area is another larger space which is known as the TRANSITION AREA. This air space may extend out to a distance of 25 miles or more from the airport with a radius centered from the same point that the CONTROL ZONE radius is designated from, and the TRANSITION AREA will comprise an area with a floor of 700 feet above the ground to a ceiling of 1,200 feet above the ground. This will be an area in this funny inverted birthday cake which will be 500 feet thick.

Above the TRANSITION AREA is an additional area known as the CONTROL AREA. This area of air space may extend upward to 6,000 feet above the ground with a floor of 1,200 feet, and may include air corridors approaching the airport from any direction and along an airway.

Airways include an air space designated on a certain heading projected to or from the VOR range at a designated airport, and a space 10 miles either side of a centerline projected on the specified heading.

The VOR radio range has changed the terminology of headings in that any radius from this range can be designated and used for describing areas of air space and airways, and these headings are known as radials.

The air space over the United States is being broken down into specific layers with an air space below 6,000 feet being known as the LOW ALTITUDE AIR SPACE. The air space between 6,000 and 14,000 feet is known as the INTERMEDIATE AIR SPACE and the air space between 14,000 and 24,000 feet to be known as the HIGH ALTITUDE AIR SPACE. Anything above 24,000 feet is the never-never land where only sacred military tactical aircraft and super-duper airliners may exist.

How far "up" is anybody's guess and with interplanetary space, one's imagination can be projected into infinity and the religious

beliefs of all races of people on our planet.

To get back down to earth, additional planning has been developed in instrument flight control in working with the problem of HOLDING PATTERNS for various types and speeds of aircraft. HOLDING PATTERNS are described in procedure turns and length of time on a prescribed heading or radial with different types and speeds of aircraft meaning Propellor Drivers Aircraft, Turbo Propellor Aircraft, and Turbojet Aircraft. Maximum air speeds within a holding pattern are designated with propellor aircraft limited to 175 knots above 14,000 feet and 170 knots above 6,000 feet. Turbo Propellor aircraft are limited to 230 knots above 14,000 feet and 210 knots above 6,000 feet. Turbo jet aircraft are limited to 265 knots above 24,000 feet and 230 knots above 14,000 feet with super special military turbo jets such as the F105 and B58 limited to maximum speeds of 310 knots above 24,000 feet. All of these limited speeds pertain to the aircraft speed while on the holding pattern. "It sure must be monotonous to hold a B58 down to 310 knots while circling a specified area."

HOLDING PATTERNS on outbound designated radials may be increased by 30 seconds above the time designated for a standard holding pattern, which is 2 minutes in length—being timed from a point opposite the holding fix with standard turns being made at a rate of 3 degrees per second. The speed of the aircraft takes care of itself in the required area needed for the holding pattern and it is easy to visualize that a faster aircraft makes a bigger pattern with the high speed aircraft having holding patterns at higher elevations in the designated air space.

The boys, at the mike, to control traffic have an ingenious series of transparent templates which they can hold up against the map of the local area. These templates are in the shape of the HOLDING PATTERN and of a size in ratio to the aircraft speed and may be laid on the map along the VOR radial which is designated for use by the aircraft being held. A template enables the communicator or traffic controller to

advise the pilot of the exact terrain over which his HOLDING PATTERN has been designated. HOLDING PATTERNS comprise a large enough area to take care of wind drift and allowed errors in pilotage. Altitudes are all based on an altimeter reading of standard pressure which is 29.92 inches of mercury.

Radio aids which enable a pilot to receive explicit instructions in approaching an airport include many frequencies—some of which are designated for control of the aircraft at various points on the landing pattern and control of the aircraft at various points on the landing pattern and control of the aircraft after it has landed on the runway. Airports with control towers and heavy traffic have to use several frequencies in issuing instructions to the pilots of aircraft arriving and departing from the field as the number of aircraft being handled at one time overloads the use of any one frequency. Additional frequencies are used in approach control wherein radar is used to direct the pilot into a position to enter the traffic pattern, or in directing the pilot in passing over the airport or within the areas described in the inverted birthday cake.

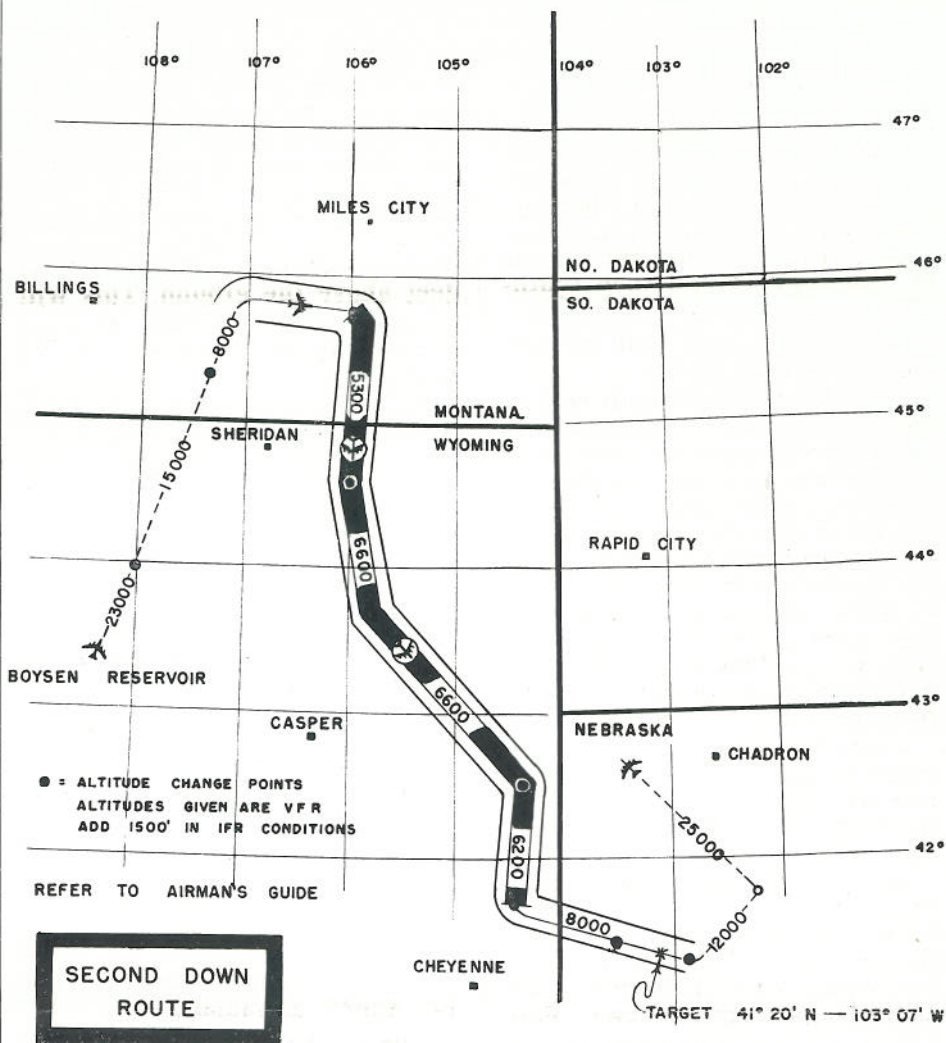
We now have control towers at four Montana airports including Billings, Great Falls, Helena and Missoula. Three of these towers are in operation and the Missoula tower will be activated within the near future. I know it is annoying to a pilot to have to turn to two or three transmitting frequencies, diverting his attention from landing and taxiing in order to communicate with control towers at these airports. However, this is an excellent opportunity for you, as a pilot, to get practice without pressure in the use of the various frequencies needed for traffic control. We should feel fortunate that we do have these facilities which we may use for improving our proficiency and for receiving training in the control of air traffic. Don't feel bad; I don't claim to be an expert either and it keeps me busy trying to remember the difference between communication frequencies and traffic control frequencies. What I need is a co-pilot to push the buttons and do the talking while I drive up to the gas pump and I am also con-

fused as to which octane gas to ask the man to put in the tank.

All of the above dissertation is to bring out the need for us to continually improve our techniques if we are going to keep up with this flying business. I think

that you and I should both get some well supervised instrument flight training.—Wiley

QUOTE: FLY AS IF YOUR LIFE DEPENDED ON IT—IT DOES! FILE A FLIGHT PLAN.



City	Airport	Oct.	Nov.	Dec.
Billings	Logan Field	2-9-16-23-30	6-13-20-27	4-11-18
Bozeman	Gallatin Field	11*-12**	15*-16**	12*-13**
Butte	Silver Bow Cty.	10		14
Culbertson	Municipal	19	9	
Glasgow	Municipal	18	8	13
Glendive	Municipal	25	15	20
Great Falls	International	4*-5**	7*-8**	5*-6**
Helena	City-County	2-9-16-23-30	6-13-20	4-11-18
Lewistown	Municipal	31	29	
Miles City	Municipal	26	16	21
Missoula	Missoula Cty.	25*-26**	27*-28**	19*-20**
Wolf Point	Municipal & Anderson			14

*Flight Tests Only

**Written Examination Only

Note: Flight tests now scheduled for the FIRST day rather than the second day on itinerary.

Exam-O-Gram No. 3

An Invisible Hazard To Light Aircraft

The Civil Aeronautics Board listed the probable cause of a recent fatal light aircraft accident as structural failure of a light aircraft resulting from excessive airloads created by **wing-tip** vortices behind a large aircraft. The report also states: "The dangers of wake or vortex turbulence are still unknown to many pilots."

Discussion of Wing-Tip Vortices

1. What are Wing-Tip Vortices?

It is unfortunate that vortices are invisible. If you could see them, they would look like a pair of horizontal tornadoes stretching back from each wing tip. These violent, compact and fast-spinning air masses extend behind an aircraft for miles. Many pilots refer to this phenomenon as "prop wash" or "jet wash", but engineering studies have revealed this term a misnomer. The main source of this disturbance is not from the power plant; it is from the wing tips.

2. Why are They Dangerous?

They are dangerous because all tests to date indicate that **structural failure in the air** can occur in light aircraft upon penetration of the vortices behind larger transport aircraft. During takeoff and landing care should be taken to **avoid vortex disturbance**. Loss of control could be the result at a critical time when control is of prime importance to safety. (See Pilots Weather Handbook, page 73.)

3. Under What Conditions are They Most Dangerous? There are many factors affecting the intensity of wing-tip vortex, but it is a safe and practical generalization that **the bigger the ship the more violent and long-lived** will be the vortex disturbance. The source of this insidious danger can be out of sight by the time you encounter the wake. For example, when a large jet aircraft climbs at approximately 420 mph, the peak turbulence is **3½ miles** behind, and a relatively high degree of turbulence will exist for **7 miles**.

4. What Action Can the Pilot Take to Avoid or Reduce This Hazard?

a. Avoid passing behind any large aircraft.

b. Avoid, when possible, places and altitudes frequented by large aircraft. Constantly monitor your radio for location of such aircraft.

c. If you pass behind a crossing aircraft in flight, change altitude and slow down (at half the speed the shock will be only one-fourth as great.)

d. If you do get into a bad vortex in flight, your best procedure is to throttle back, "ride it out", and avoid "fighting the controls" since to do so may aggravate the condition.

e. When taking-off or landing behind large aircraft, be on the **alert** for the first sign of turbulence; allow adequate spacing, maintain higher than normal speeds, use the windward side of the runway, and maintain a flight path to the windward of the preceding aircraft. (See Flight Information Manual, Vol. 13, Dec., 1959, page 52, item 6.)

FAA, FCC Agree on Tall Tower Measures

FAA Administrator Najeeb Halaby and Federal Communications Commission Chairman Newton Minow announced agreements recently on a number of "measures to insure . . . coordination" of FAA's new tall tower regulations with FCC requirements to prevent "any unnecessary restriction." The agreements capped "a series of discussions" by policymakers and staff aides of both agencies. The new rule, which the FCC bar had strongly opposed, took effect July 15.

One of the measures has been adopted—amendment of the tall tower regulations so that simultaneous filings with FAA and FCC by a TV or radio station applicant will satisfy the FAA advance-filing requirement without 30-day notice to FAA. Others, according to FAA's announcement will be (1) a clause to insure that no antenna farm would be established that would interfere with FCC's "statutory responsibility"; (2) an FCC-proposed statement in the regulations that FAA tall tower airspace hearings would not "affect the jurisdiction" of FCC in its regulation of the broadcast industry, and (3) automatic exemption of antennas not exceeding 20 feet in height regardless of the height of the structure on which they are built.

The Public and Light Planes

Understanding and support are two of general aviation's greatest needs. Pilots can help educate the layman as to the real economic and social value of private and business flying.

"Any employee who pilots or rides in a small plane, in performance of company duties or on his own time, will be summarily dismissed."

This memorandum was published recently by the vice president of a major manufacturer. Two months earlier, a national distributing firm reminded its traveling personnel that only scheduled airline service would be condoned, with one exception. "Air Force Reservists, satisfying requirement, may fly military craft; however, upon completion of 20 years they must desist from further piloting activities. Any employee who holds a civilian flyer's license is encouraged to have it revoked."

Yes! We have a selling job to do that goes farther than selling flying machines. The public's understanding and support of general aviation is essential to the interests of those who fly. It is necessary to the general welfare. The lay public must be awakened to the impact of aviation on the economic, political, social and technical well-being of everyday American living and modern business.

The job has not been done. A recent survey shows that only one adult in seven has ever been in an airplane of any kind.

Air-age education is even needed among men assumed to know the flying picture best. When an eastern community lost its local carrier service because of lack of traffic, private pilots pleaded that the airport be retained. The two-hour meeting broke up when the chairman of the airport board concluded, "If you guys want to play around with those airplanes, get out in the country where you won't bother people and kill off our kids."

Until the public knows and understands private aviation, its present position, its possibilities, its needs and its problems, we will never realize the full benefits that the private plane is capable of providing.

The first misconception stems from the failure of most nonflyers to realize that the "little plane" has function. Recently, an airport bond issue was defeated for the third time in a midwestern community that boasts of its progressive leadership and industrial development. A community leader was jubilant, declaring, "If a man has enough money to own a private plane, he ought to be able to provide his own place to fly it. I didn't ask the taxpayers to build that swimming pool I have in my yard."

In the thinking of Mr. Average Citizen, the private plane is still a daredevil's toy, something flown for sport and for show, a vehicle to satisfy the psychotic whims of the seeker of thrills. The functional needs filled by the private plane are little known and seldom understood or appreciated.

Most people are unconvinced when told that the private fleet is 35 times as large as the entire domestic airline fleet. They are unimpressed by the fact that more than 28,000 private planes are flown to satisfy business travel needs, or that this business-flown fleet accounts for over a million more aircraft hours a year than all the planes of the domestic carriers.

Until general aviation is accepted in the thinking of the lay public as a legitimate and functional means of travel, a mode of transport, a method of transportation, we cannot expect understanding and support.

A second misconception relates to common beliefs concerning the safety of "little planes." Standing in the terminal in Kansas City, I overheard the authoritative explanation by the girl at the information booth, "No! The little planes cannot fly when the weather is like this. They don't have any radios."

A prominent Montana lady refused to make a charter flight from Billings to Jackson when told that the plane was four years old, yet, she was a regular commuter in 1944 vintage DC-3's.

Only the flying fraternity realizes that structural integrity is not based on the size of the plane. Non-flyers cannot comprehend that the typical single-engine private plane has a load flight factor of from +3.6 to 4.6 and a neg-

ative factor of around -1.5, while the old Gooney Bird, one of the best heavy planes in structural integrity, barely struggled up to +3.2.

Unqualified news reporting of accidents has not helped. "The plane burst into flame and plummeted to the ground," or "The plane turned into the wind, causing the engine to stall."

It is not just the news story written by a society editor that gives the false word. A reputable consulting firm reports that aircraft weighing less than 12,500 pounds do not have the performance capability of heavy planes. This is then cited as a reason for less safe characteristics of "little planes." We might ask, "Performance capabilities for what?"

One publication sagely observes that private pilots in light planes often land on airstrips where even an airliner would not land.

How can we expect the public to know the built-in safety qualities of a small plane? How can they be informed on such factors as high lift, low stalling speeds, glide ratios, slow landing speeds, maneuverability and simplicity?

Perhaps as false a conception is found in the image of the man who flies the lighter craft. Here we have a real responsibility for precept and example. The image of the wind-blown adventurer who thrives on close calls and who finds satisfaction in a feeling of weightlessness and abnormal attitudes must be replaced by the true picture of the progressive man who accepts and uses the private plane as a means of covering more territory, seeing more prospects, and making more sales. We must take the pilot out of his leather jacket in the minds of the public, just as the pilot has taken himself out of it in fact.

True, the private pilot is not the "high time man" when compared with airline standards, but the different FAA certificates testify to the differences in need. Standards are geared to the equipment he will fly, the purpose for which he flies, and the conditions under which he flies. Equipment is designed to meet the varying needs of pilots under varying conditions of use.

To protect our interests and to provide understanding, every segment of aviation—those of us who

fly, those who live by the profits of the industry, agencies of government—we must all crusade to bring general aviation into proper focus. Our story must be heard. It must be heeded.

An individual pilot has his individual responsibilities. By a continuing high degree of proficiency and by example, we must pave the way. We must display judgment and discretion. We must recognize limitations based on our experience levels and our levels of skills; we must recognize the limitations of the equipment we fly.

In addition to setting "the good example," every pilot, every operator, every aviation leader must speak out and provide honest, accurate and meaningful information to the vast publics that need to hear the word. This presupposes that every man who has the future of general aviation at heart will accept as his personal challenge the obligation of being well informed.

Any man who knows aviation and has a sincere interest in private flying, can stand up and tell his story with impact and effectiveness.

There are over 15,000 civic and service clubs in the United States that are looking for a program every week, 52 weeks a year. These are men who lead community thinking. These are men whose support and understanding must be won.

Some states report a continued decrease in the number of active airports. This trend will work to the prejudice of our future unless the city dads know the problem and know the needs. More important, they must know the benefits.

We have a terrific story to tell and any of us can tell it. Few of us feel equipped to make a speech, but we do not have to make a speech. There are other ways we can insure that the message will be heard.

When the chairman of a program committee needs a program, volunteer to provide it. Remember, you are not going to make a speech. You are going to provide a program. Take a copy of one of the fine films available through the National Association of State Aviation Officials, or a good film produced by one of the manufac-

turers or any of the fine film strips being produced on learning to fly—take—don't send—take the film and present it. Be the man who made the program possible. Take the bows. Introduce the film.

Most of the films are in color and with sound. An example would be "Wings for Doubting Thomas" which runs 13 minutes. A club normally allots 25 to 30 minutes for a program. Arbitrarily plan on giving them five minutes change. This means you have seven to 12 minutes to use other than for the film.

("Wings for Doubting Thomas" was produced by Cessna Aircraft Company, Wichita, Kan. Readers who are interested in presenting this film, as suggested by Dr. Thomason, should write Robert Chatley, Cessna's advertising and sales promotion director. There are also a number of fine films available from the Montana Aeronautics Commission. We will be happy to send you a listing of these films.—Editor)

Introduce it. Thank them for the chance to be aboard. Give them a few, short, pointed comments on the accelerated growth of general aviation. You can do this, even if you are not a William Jennings Bryan. Take a summary of the Curtis study and pick out some startling facts and predictions. Give them something to

think about.

How many of them realize, as they buy an airline ticket or climb into a private plane, that only 57 years ago, the air was strictly for the birds when the canvasbacked duck held the speed record at about 40 miles an hour and the altitude record was held by the American eagle. Today, man has been almost 200 miles into the air.

Have they stopped to realize that we have made more progress, as regards the speed with which man can move through space, since the bombing of Pearl Harbor than we had made between the invention of the wheel and 1941? Assure them that we have only scratched the surface.

It will be difficult for the average businessman to realize that one acre out of every six under cultivation in the United States, if we include commercially grown timber, is either seeded, sown, dusted or sprayed by scientific aerial application, adding some \$3 billion a year to the farm income of this country.

They haven't asked the question, but many are sitting there, wondering how much it costs to learn to fly. Give them a "ballpark" figure. Explain that a typical, modern, well-equipped, four-place private plane can be flown for about the same operational costs as the family car.

What is general aviation?

Where did it come from? Where is it going?

We have the story on film and with sound. When the film is finished, and the lights are up, volunteer to answer questions. Have two friends primed to lead off.

"How long does it take to learn to fly?"

"What physical requirements must be met?"

"What happens if the engine quits?"

"How does our airport compare with the one over at Rival Ville?"

Do you know what is going to happen? You'll run overtime. Other groups will hear about the program and ask you to present it to their clubs. You are in demand. . . . Mr. Aviation, Himself.

By keeping our proficiency at a level that is high, by demonstrating safe flying and setting examples through discretion and good judgement, by keeping informed and by sharing our enthusiasm and our know-how with the groups who need to hear the word, we can discharge a responsibility that is incumbent upon all of us who fly.

By Dr. Leslie L. Thomason
An AOPA PILOT Reprint

September 13, 1906—(France)
Santos Dumont makes first officially recorded aeroplane flight in Europe. In air 8 seconds.

MEMBER

NATIONAL ASSOCIATION OF STATE AVIATION OFFICIALS

PURPOSE:—"To foster aviation as an industry, as a mode of transportation for persons and property and as an arm of the national defense; to join with the Federal Government and other groups in **research, development, and advancement of aviation**; to develop uniform aviation laws and regulations; and to otherwise encourage co-operation and mutual aid among the several states."



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